



# FERTILITY AND STERILITY

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## COVER

Karl Freiherr von Rokitsky (1804–1878), ordinary professor of pathologic anatomy of the Medical University of Vienna (see page 1537).

## MODERN TRENDS

### 1501 Impact of bariatric surgery on female reproduction

Z. O. Merhi

*Bronx and Brooklyn, New York*

Bariatric surgery in morbidly obese women seems to improve reproductive hormone profile, fertility status, sexuality, and pregnancy outcomes; however, it may be linked to oral contraceptive failure.

### 1515 Practice Committee documents: an effort to improve practice

W. E. Gibbons, R. D. McClure, on behalf of the ASRM Executive Committee

*Houston, Texas; and Seattle, Washington*

This editorial, written on behalf of the American Society for Reproductive Medicine Executive Committee, details the care and thought that is involved in the production of every Practice Committee document and the Society's efforts at self regulation.

## EDITOR'S CORNER

### 1509 Egg freezing, procreative liberty, and ICSI: the double standards confronting elective self-donation of oocytes

E. A. Rybak and H. J. Lieman

*Bronx, New York*

The dramatic improvement in efficacy and minimal risk posed by elective egg freezing mandate the prioritization of patient autonomy and fairness over considerations of experimentalism.

## PRACTICE COMMITTEE REPORTS

### 1517 Definition of "experimental procedures"

The Practice Committee of the American Society for Reproductive Medicine

*Birmingham, Alabama*

This Practice Committee Opinion provides a revised definition of experimental.

### 1513 ASRM Practice Committee response to Rybak and Lieman: elective self-donation of oocytes

The Practice Committee of the American Society for Reproductive Medicine

*Birmingham, Alabama*

Oocyte cryopreservation has great promise for applications in oocyte donation and fertility preservation and for decreasing the number of unused cryopreserved embryos. The Practice Committee has and will continue to review the published medical literature relating to oocyte cryopreservation at regular intervals and is prepared to reconsider its position when evidence warrants.

### 1518 Guidelines on number of embryos transferred

The Practice Committee of the American Society for Reproductive Medicine and the Practice Committee of the Society for Assisted Reproductive Technology

*Birmingham, Alabama*

The American Society for Reproductive Medicine guidelines for the number of embryos to be transferred in in vitro fertilization cycles have been further refined in continuing efforts to reduce the number of higher-order multiple pregnancies.



## SPECIAL CONTRIBUTION

### 1520 International Committee for Monitoring Assisted Reproductive Technology (ICMART) and the World Health Organization (WHO) revised glossary of ART terminology, 2009\*

F. Zegers-Hochschild, G. D. Adamson, J. de Mouzon, O. Ishihara, R. Mansour, K. Nygren, E. Sullivan, and S. Vanderpoel for ICMART and WHO

*Santiago, Chile; Palo Alto and San Jose, California; Paris, France; Moroyama, Saitama, Japan; Cairo, Egypt; Stockholm, Sweden; Sydney, Australia; and Geneva, Switzerland.*

Standardized terminology should assist in analysis of worldwide trends in medically assisted reproduction interventions and in the comparison of ART outcomes across countries and regions. This glossary will contribute to a more standardized communication among professionals responsible for ART practice, as well as those responsible for national, regional and international registries.

## ENDOMETRIOSIS

### 1525 Smooth muscle metaplasia and innervation in interstitium of endometriotic lesions related to pain

K. Odagiri, R. Konno, H. Fujiwara, S. Netsu, C. Yang, and M. Suzuki

*Saitama and Tochigi, Japan; Pingtung County, Taiwan*

Major pathological findings in endometriotic interstitium are smooth muscle metaplasia and innervation, which are related to endometriotic pain.

### 1532 CYP17 and CYP19 gene polymorphisms in women affected with endometriosis

M. T. Vietri, M. Cioffi, M. Sessa, S. Simeone, P. Bontempo, E. Trabucco, M. Ardovino, N. Colacurci, A. M. Molinari, and L. Cobellis

*Naples, Italy*

The identification of single-nucleotide polymorphism (SNP) probably linked to endometriosis could help to explain its pathogenesis.

### 1536 The migrating adenomyoma: past views on the etiology of adenomyosis and endometriosis

G. Hudelist, J. Keckstein, and J. T. Wright  
*Villach and Vienna, Austria; Chertsey and Guildford, United Kingdom*

This article discusses the history surrounding the debate on the etiopathology of endometriosis, specifically deep infiltrating endometriosis, and traces the controversies in its management that are as pertinent today as they were when the disease was first described in the late 19th and early 20th centuries.

## GENETICS

### 1544 Preimplantation genetic diagnosis of single-gene disorders: experience with more than 200 cycles conducted by a reference laboratory in the United States

C. Gutiérrez-Mateo, J. F. Sánchez-García, J. Fischer, S. Tormasi, J. Cohen, S. Munné, and D. Wells  
*Livingston, New Jersey; and Oxfordshire, United Kingdom*

Retrospective data review confirms that PGD is an effective reproductive strategy for patients at high risk of transmitting monogenic disorders. Potential technical difficulties are highlighted and approaches to overcome them discussed.

## INFERTILITY

### 1557 Risk of birth defects increased in pregnancies conceived by assisted human reproduction

D. El-Chaar, Q. Yang, J. Gao, J. Bottomley, A. Leader, S. Wu Wen, and M. Walker  
*Ottawa, Ontario, Canada*

The risk of birth defects is increased in pregnancies conceived by assisted human reproduction. In a retrospective cohort study, a significant increase in birth defects associated with AHR was found. The risk was higher in IVF and IUI.

## IN VITRO FERTILIZATION

### 1562 Automated assessment of ovarian follicles using a novel three-dimensional ultrasound software

T. D. Deutch, I. Joergner, D. O. Matson, S. Oehninger, S. Bocca, D. Hoenigmann, and A. Abuhamad  
*Norfolk, Virginia; Waukesha, Wisconsin; and Vienna, Austria*

Automated follicular assessment is accurate and more efficient than the standard method of follicular measurement. This technology automatically measures follicular volumes and offers a new method of assessing follicular development.

### 1569 A proteomic analysis of IVF follicular fluid in women $\leq 32$ years old

S. J. Estes, B. Ye, W. Qiu, D. Cramer, M. D. Hornstein, and S. A. Missmer  
*Boston, Massachusetts*

Haptoglobin alpha, predominantly fetal expressed T1 domain, mitochondrial integrity genome (ATPase), apolipoprotein H (beta-2 glycoprotein I), dihydrolipoyl dehydrogenase, lysozyme, fibrinogen, and immunoglobulin V-III (region BRO) showed increased expression in the live birth group (good responders), although antithrombin, vitamin D-binding protein, and complement 3 were decreased.

**1579 The sex ratio of singleton offspring in assisted-conception pregnancies**

B. Luke, M. B. Brown, D. A. Grainger, V. L. Baker, E. Ginsburg, and J. E. Stern, a Society for Assisted Reproductive Technology Writing Group  
*East Lansing, and Ann Arbor, Michigan; Wichita, Kansas; Stanford, California; Boston, Massachusetts; and Lebanon, New Hampshire*

Assisted reproductive technology, and in particular intracytoplasmic sperm injection and blastocyst-stage embryo transfers, appears to be associated with a decrease in the sex ratio of male infants.

**1586 Circulating basal anti-Müllerian hormone levels as predictor of ovarian response in women undergoing ovarian stimulation for in vitro fertilization**

L. G. Nardo, T. A. Gelbaya, H. Wilkinson, S. A. Roberts, A. Yates, P. Pemberton, and I. Laing  
*Manchester, United Kingdom*

Basal AMH is an useful predictor of extremes of ovarian response to gonadotrophins and performs better than AFC and FSH. Measurements of AMH should be used to individualize and optimize the stimulation protocols before the first IVF cycle.

**1594 High ongoing pregnancy rates after deferred transfer through bipronuclear oocyte cryopreservation and post-thaw extended culture**

B. S. Shapiro, S. T. Daneshmand, F. C. Garner, M. Aguirre, C. Hudson, and S. Thomas  
*Las Vegas, Nevada*

Post-thaw extended culture of pronuclear oocytes yielded ongoing pregnancy rates of 79.2% per transfer in patients less than 35 years old and 51.2% per transfer in patients 35–40 years old.

**1600 Pilot study evaluating a progesterone vaginal ring for luteal-phase replacement in donor oocyte recipients**

L. Stadtmauer, D. D. Harrison, J. Boyd, S. Bocca, and S. Oehninger  
*Norfolk, Virginia; and Bala Cynwyd, Pennsylvania*

In a pilot investigation, a P vaginal ring was effective for luteal support in recipients of oocyte donation.

## MALE FACTOR

**1606 Real-time polymerase chain reaction shows that density centrifugation does not always remove *Chlamydia trachomatis* from human semen**

N. Al-Mously, N. A. Cross, A. Eley, and A. A. Pacey  
*Sheffield, United Kingdom*

Experiments show that density centrifugation may not always remove *Chlamydia trachomatis* from human semen, reinforcing the need for adequate screening of the male partner before assisted conception.

**1616 A new real-time morphology classification for human spermatozoa: a link for fertilization and improved embryo quality**

N. G. Cassuto, D. Bouret, J. M. Plouchart, S. Jellad, P. Vanderzwalmen, R. Balet, L. Larue, and Y. Barak  
*Paris, France; and Rosh HaAyin, Israel*

Our detailed classification scale scores the predictive fertilizing potential of individual spermatozoon in real time during intracytoplasmic sperm injection.

**1626 Physiologic and pathologic levels of reactive oxygen species in neat semen of infertile men**

N. Desai, R. Sharma, K. Makker, E. Sabanegh, and A. Agarwal  
*Cleveland, Ohio*

Cutoff values were established for physiologic and pathologic reactive oxygen species levels in neat semen. These can be used to identify infertile men with a higher sensitivity and specificity.

**1632 Does a clinical varicocele influence the relationship between testicular volume by ultrasound and testicular function in patients with infertility?**

H. Sakamoto and Y. Ogawa  
*Tokyo, Japan*

The testicular volume–function correlation was observed to differ between patients with varicocele and those without varicocele. The presence of varicocele therefore influences the relationship between testicular volume and testicular function.

**1638 Sperm DNA fragmentation levels in testicular sperm samples from azoospermic males as assessed by the sperm chromatin dispersion (SCD) test**

M. Meseguer, R. Santiso, N. Garrido, M. Gil-Salom, J. Remohí, and J. L. Fernandez  
*Valencia and A Coruña, Spain*

Sperm DNA fragmentation has been studied to analyze testicular sperm samples from azoospermic patients. Spermatogenesis failure may severely affect sperm DNA integrity, which is related to embryo quality parameters.

## POLYCYSTIC OVARY SYNDROME

**1646 Effect of preconceptional metformin on abortion risk in polycystic ovary syndrome: a systematic review and meta-analysis of randomized controlled trials**

S. Palomba, A. Falbo, F. Orio Jr., and F. Zullo  
*Catanzaro and Naples, Italy*

Preconception metformin administration has no effect on abortion risk in patients with polycystic ovary syndrome.

## PREGNANCY

- 1659 Immunoglobulin G antisperm antibodies and prediction of spontaneous pregnancy**  
E. Leushuis, J. W. van der Steeg, P. Steures, S. Repping, W. Schöls, F. van der Veen, B. W. J. Mol, and P. G. A. Hompes  
*Amersfoort, Amsterdam, Rotterdam and Veldhoven, The Netherlands*  
The direct MAR test shows good reproducibility, but is unable to predict chances of a spontaneous pregnancy.

## REPRODUCTIVE ENDOCRINOLOGY

- 1666 Bone morphogenetic protein 15 expression in human ovaries from fetuses, girls, and women**  
S. Margulis, R. Abir, C. Felz, S. Nitke, H. Krissi, and B. Fisch  
*Petach Tikva and Tel Aviv, Israel*  
Bone morphogenetic protein 15 was expressed on the protein and mRNA levels in granulosa cells and oocytes of human follicles from fetuses, girls, and women from primordial stages onwards.
- 1674 Variations in serum müllerian inhibiting substance between white, black, and Hispanic women**  
D. B. Seifer, E. T. Golub, G. Lambert-Messerlian, L. Benning, K. Anastos, D. H. Watts, M. H. Cohen, R. Karim, M. A. Young, H. Minkoff, and R. M. Greenblatt  
*Bronx and Brooklyn, New York; Baltimore and Bethesda, Maryland; Providence, Rhode Island; Chicago, Illinois; Los Angeles, San Francisco, California; and Washington, D.C.*  
There is an independent effect of race and ethnicity on the age-related decline in serum MIS/AMH over time.
- 1679 Significant elevation of plasma matrix metalloproteinase-9 level and its ratio to matrix metalloproteinase-2 in patients with pelvic inflammatory disease**  
P.-H. Wang, H.-T. Tsai, Y.-T. Tee, L.-Y. Lin, S.-F. Yang, and Y.-S. Hsieh  
*Taichung, Taiwan*  
Plasma MMP-9 and MMP-9:MMP-2 ratio are elevated in PID. In patients with PID, 80% have a plasma MMP-9 level higher than 115 ng/mL or a MMP-9:MMP-2 ratio higher than 2.15.

## REPRODUCTIVE SURGERY

- 1685 Quality of life 15 years after sex reassignment surgery for transsexualism**  
A. Kuhn, C. Bodmer, W. Stadlmayr, P. Kuhn, M. D. Mueller, and M. Birkhäuser  
*Bern, Switzerland*  
Transsexuals have a similar quality of life as controls with an impairment of general health, physical role, and personal limitations.

## UTERINE FIBROIDS

- 1690 Uterine synechiae after bipolar hysteroscopic resection of submucosal myomas in patients with infertility**  
C. Touboul, H. Fernandez, X. Deffieux, R. Berry, R. Frydman, and A. Gervaise  
*Clamart and Paris, France*  
In a population of 53 infertile patients, a 7.5% uterine synechiae rate was observed after hysteroscopic resection of submucous myomas using bipolar energy.

## REPRODUCTIVE BIOLOGY

- 1694 Differences in muscarinic-receptor agonist-, oxytocin-, and prostaglandin-induced uterine contractions**  
R. Dittrich, A. Mueller, P. G. Oppelt, I. Hoffmann, M. W. Beckmann, and T. Maltaris  
*Erlangen, Germany*  
The intrauterine pressure profile after administration of a muscarinic-receptor agonist, oxytocin, and various prostaglandins was evaluated in a perfused swine uterus model. All of these substances produce characteristic contractility patterns.
- 1701 Doxycycline inhibits vascular leakage and prevents ovarian hyperstimulation syndrome in a murine model**  
O. Fainaru, M. D. Hornstein, and J. Folkman  
*Boston, Massachusetts*  
Doxycycline prevents ovarian hyperstimulation syndrome (OHSS) in mice without compromising ovarian stimulation and consequent ovulation. This effect is caused by the inhibition of vascular leakage. Its safety in human OHSS warrants further studies.

**1706 High survival rate of metaphase II human oocytes after first polar body biopsy and vitrification: determining the effect of previtrification conditions**

L. Keskintepe, Y. Agca, G. Sher, M. Keskintepe, and G. Maassarani

*Las Vegas, and Reno, Nevada; and Columbia, Missouri*

Recent advances in assisted reproductive technologies enable successful cryopreservation of unfertilized oocytes. Human oocyte cryopreservation provides solutions to moral and ethical issues associated with cryopreservation of preimplantation human embryos and a future fertility option to women undergoing chemotherapy or irradiation for a life-threatening disease.

**1716 Derivation of developmentally competent oocytes by the culture of preantral follicles retrieved from adult ovaries: maturation, blastocyst formation, and embryonic stem cell transformation**

I. W. Kim, S. P. Gong, C. R. Yoo, J. H. Choi, D. Y. Kim, and J. M. Lim

*Seoul, Korea*

Immature oocytes in adult preantral follicles can acquire developmental competence by follicle culture for blastocyst formation and embryonic stem cell-like colony formation.

**1725 In vitro fertilization, embryo development, and cell lineage segregation after pre- and/or postnatal exposure of female mice to ambient fine particulate matter**

M. Maluf, P. M. Perin, D. A. N. F. Januário, and P. H. N. Saldiva

*São Paulo, Brazil*

Pre- and/or postnatal exposure of female mice to ambient fine particulate matter does not affect fertilization or embryo development in vitro but impairs cell lineage segregation in the preimplantation blastocyst.

**1736 Aquaporin-4 deficiency induces subfertility in female mice**

X.-L. Sun, J. Zhang, Y. Fan, J.-H. Ding, J.-H. Sha, and G. Hu

*Nanjing, Jiangsu, People's Republic of China*

Here we report that Aquaporin 4 (AQP4) null mice display subfertility as evidenced by a lower success rate of pregnancy and decreased litter size, as well as provide in vivo evidence for the first time that AQP 4 deficiency induces subfertility in female mice.

## IMAGES IN REPRODUCTIVE MEDICINE

**1744 Endometrial stromal sarcoma mimicking a myoma**

K. Jayakrishnan, A. K. Koshy, P. Manjula, A. M. Nair, A. Ramachandran, and J. Kattoor

*Trivandrum, Kerala, India*

It is not uncommon to misdiagnose uterine malignancies for the more ubiquitous leiomyoma on imaging. A case of endometrial stromal sarcoma is described.

## CASE REPORT SUMMARIES

**1747 Inadvertent recombinant human follicle stimulating hormone bolus instead of human chorionic gonadotrophin leads to the retrieval of competent oocytes in IVF program**



V. Bianchi, L. D. Prato, A. Maccolini, S. Mazzone, and A. Borini

*Udine and Bologna, Italy*

Retrieval of mature oocytes and normal development of embryos reported after a r-hFSH bolus (2100 IU) administration instead of hCG because of patient error.

**1747 47,XXX/45,X/46,XX mosaicism in a patient with Turner phenotype and spontaneous puberal development**



A. J. L. Brambila-Tapia, H. Rivera, H. García-Castillo, M. G. Domínguez-Quezada, and I. P. Dávalos-Rodríguez

*Guadalajara, México*

A 24-year-old patient with infertility and karyotype mos 47,XXX/45,X/46,XX is described. Her infertility can be related to the bicornuate uterus, the decrease of 132#primordial follicles, or subclinical abortions.

**1747 Successful treatment of cesarean scar pregnancy using laparoscopically assisted local injection of etoposide with transvaginal ultrasound guidance**



C.-H. Chen, P.-H. Wang, and W.-M. Liu

*Taipei, Taiwan*

The use of a laparoscopic local injection of 100 mg etoposide with transvaginal ultrasound assistance might be considered for women with cesarean scar ectopic pregnancy.



**1747** **Aberrant implantation and growth of uterine leiomyoma in the abdominal wall after laparoscopically assisted myomectomy**



O. Wada-Hiraike, N. Yamamoto, Y. Osuga, T. Yano, S. Kozuma, and Y. Taketani  
*Tokyo, Japan*

Gynecologists should be aware that the uterine leiomyoma fragments created during laparoscopically assisted myomectomy can incidentally implant and grow at the incision site of the abdominal wall.

**1748** **The therapeutic management of a twin pregnancy complicated by the presence of cervical cancer, following laparoscopic staging and chemotherapy, with an emphasis on cisplatin concentrations in the fetomaternal compartments amnion fluid, umbilical cord, and maternal serum**



S. Marnitz, A. Schmitt, J. Bolbrinker, F.-P. Schmidt, G. Fons, K. Kalache, A. Schneider, and C. Köhler  
*Berlin, Germany; and Amsterdam, The Netherlands*

This is the first report quantifying the amount of transplacental transport of cisplatin during pregnancy in vivo; 1/10 of the maternal serum concentration was detected in the amniotic fluid.

**1748** **A case of unusual course of adolescent menorrhagia: decidual cast as a side effect of treatment**



A. Torres, E. Baszak-Radomańska, K. Torres, T. Paszkowski, G. J. Staśkiewicz, and E. Wozniakowska  
*Lublin, Poland*

The case of a large decidual cast occurring as an unusual side effect of routine therapy for adolescent menorrhagia is presented, with commentary focusing on management options.

**1748** **Sperm meiotic segregation and aneuploidy in a 46,X,inv(Y),t(10;15) carrier: case report**



M. Vozdova, E. Oracova, R. Gaillyova, and J. Rubes  
*Brno, Czech Republic*

A high frequency of unbalanced spermatozoa (59.18%) and no interchromosomal effect on chromosomes X, Y, 8, 18, and 21 were detected in sperm of a 46,X,inv(Y),t(10;15) carrier by fluorescence in situ hybridization.

## CORRESPONDENCE

**1749** **Comparative analysis of the spindle and chromosome configurations of in vitro –matured oocytes from patients with endometriosis and from control subjects: a pilot study**

I. D. Barcelos, R. C. Vieira, E. M. Ferreira, W. P. Martins, R. A. Ferriani, and P. A. Navarro  
*São, Brazil*

Preliminary data from a prospective controlled study did not demonstrate an increased percentage of meiotic abnormalities for in vitromatured oocytes obtained from stimulated cycles of endometriosis patients.

**1753** **Reduced serum ghrelin in a putative postmenopausal polycystic ovary syndrome phenotype**

A. J. Krentz and E. Barrett-Connor  
*San Diego, La Jolla, California*

We found reduced ghrelin concentrations in women with a putative postmenopausal polycystic ovary syndrome (PCOS) phenotype. Our findings, which concur with reports in premenopausal women with PCOS, support the validity of our phenotype.

**1755** **Maternal protein-energy and energy-restricted diets during lactation possibly could program folliculogenesis and the ovarian expression of leptin and its different isoform receptors in rats**

F. da Silveira Cavalcante, F. M. Gombard, R. V. Ferreira, T. da Silva Faria, W. S. Costa, F. J. B. Sampaio, and C. da Fonte Ramos  
*Rio de Janeiro, Brazil*

Maternal protein-energy and energy-restricted diets during lactation possibly could program folliculogenesis and the ovarian expression of leptin and its different isoform receptors in rats.

**1758** **Comparison of GnRH antagonist protocol with or without oral contraceptive pill pretreatment and GnRH agonist low-dose long protocol in low responders undergoing IVF/intracytoplasmic sperm injection**

C.-H. Kim, G.-H. Jeon, Y.-P. Cheon, I. Jeon, S.-H. Kim, H.-D. Chae, and B.-M. Kang  
*Seoul, Korea*

A GnRH antagonist protocol with oral contraceptive pretreatment is at least as effective as a GnRH agonist low-dose long protocol in low responders undergoing IVF/ICSI.

- 1761 Comparison of the clinical value of CA 19-9 versus CA 125 for the diagnosis of endometriosis**  
Z. Kurdoglu, R. Gursoy, M. Kurdoglu, M. Erdem, O. Erdem, and A. Erdem  
*Ankara, Turkey*  
Serum CA 19-9 measurement is a helpful diagnostic tool in the clinical evaluation of endometriosis and to predict severe endometriosis when used with CA 125.
- 1764 Comparison of the offspring sex ratio between fresh and vitrification-thawed blastocyst transfer**  
P.-Y. Lin, F.-J. Huang, F.-T. Kung, L.-J. Wang, S. Y. Chang, and K.-C. Lan  
*Kaohsiung, Taiwan*  
The live birth sex ratio influenced by blastocyst-stage embryo transfer is correlated with top-quality embryo morphology.
- 1767 Isolation and identification of genes differentially expressed in premature luteinization granulosa cell during controlled ovarian hyperstimulation**  
X. Long, C. Peng, and G. Lu  
*Changsha, People's Republic of China*  
This is the first report to determine genes involved in premature luteinization during COH. Additional study of these genes will shed new light on the molecular mechanisms of premature luteinization.
- 1772 Paternal age and assisted reproductive technology outcome in ovum recipients**  
M. Luna, E. Finkler, J. Barritt, N. Bar-Chama, B. Sandler, A. B. Copperman, and L. Grunfeld  
*New York, New York*  
Advanced paternal age negatively affects semen parameters as well as clinical and embryological IVF outcome in ovum donation cycles.
- 1776 Does dilation and curettage versus expectant management for spontaneous abortion in patients undergoing in vitro fertilization affect subsequent endometrial development?**  
K. S. Moon, K. S. Richter, M. J. Levy, and E. A. Widra  
*Washington, D.C.; and Rockville, Maryland*  
In in vitro fertilization patients, treatment of spontaneous abortion with dilation and curettage versus expectant management has no effect on subsequent endometrial development, as measured by change in endometrial thickness.
- 1781 Influence of black cohosh (*Cimicifuga racemosa*) use by postmenopausal women on total hepatic perfusion and liver functions**  
A. Nasr and H. Nafeh  
*Assiut, Egypt*  
No significant effect on hepatic perfusion or liver function was found with 12-month use of *Cimicifuga racemosa* by healthy postmenopausal women in this prospective longitudinal clinical trial.
- 1783 Continuous uninterrupted single medium culture without medium renewal versus sequential media culture: a sibling embryo study**  
M. L. Reed, A. Hamic, D. J. Thompson, and C. L. Caperton  
*Albuquerque, New Mexico*  
Sibling embryo development to the blastocyst stage was significantly better in continuous uninterrupted single medium culture versus sequential media, demonstrating no advantage to the use of a sequential media system.
- 1787 Soy lecithin replaces egg yolk for cryopreservation of human sperm without adversely affecting postthaw motility, morphology, sperm DNA integrity, or sperm binding to hyaluronate**  
M. L. Reed, P. C. Ezech, A. Hamic, D. J. Thompson, and C. L. Caperton  
*Albuquerque, New Mexico*  
Soy lecithin can replace hen's egg yolk as a supplement to cryopreservation medium without adversely affecting postthaw motility or morphology, sperm DNA fragmentation, or sperm binding to hyaluronate.
- 1791 Ectopic pregnancy rates after in vitro fertilization: a look at the donor egg population**  
E. R. Rosman, D. A. Keegan, L. Krey, M. Liu, F. Licciardi, and J. A. Grifo  
*New York, New York*  
Ectopic pregnancy (EP) rates after IVF-ET in donor egg recipients were compared with EP rates in standard IVF patients. No significant difference in EP rates was observed, despite differing patient characteristics.

**1794 Bone morphogenetic protein-6 stimulates gene expression of follicle-stimulating hormone receptor, inhibin/activin  $\beta$  subunits, and anti-Müllerian hormone in human granulosa cells**

J. Shi, O. Yoshino, Y. Osuga, K. Koga, Y. Hirota, T. Hirata, T. Yano, O. Nishii, and Y. Taketani  
*Tokyo and Kawasaki, Japan*

Bone morphogenetic protein-6 is an important mediator to support healthy follicle growth in the human ovary by up-regulating FSH receptor, activin subunits, and anti-Müllerian hormone expression.

**e60** – Reply: K. Hefler-Frischmuth and L. Hefler  
*Vienna, Austria*



**CLASSIFIED ANNOUNCEMENTS**

**A10 Classified Announcements**

**1799 Endometrial nerve fibers in women with endometriosis, adenomyosis, and uterine fibroids**

X. Zhang, B. Lu, X. Huang, H. Xu, C. Zhou, and J. Lin  
*Hangzhou, Zhejiang, People's Republic of China*

Pain-associated PGP9.5-immunoactive nerve fibers in the functional layer endometrium in women with endometriosis, adenomyosis, or uterine fibroids may play a role in the mechanism of pain generation in these diseases.

**BOOK REVIEW**

**1802 Review of *Imaging in Gynecology*, edited by R. S. James, K. Anne and W. Paula**

J. E. Buster  
*Providence, Rhode Island*

**LETTERS TO THE EDITOR**

**e59 Serologic markers of autoimmunity in women with the polycystic ovary syndrome**



F. F. Verit



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**Complete instructions for authors** may be found in the June and December issues of the journal and at the journal's website, <http://www.fertstert.org>

All clinical trials that begin after January 1, 2008, must show proof of registration with the Protocol Registration System (<http://prinfo.clinicaltrials.gov>), a public trials registry provided by the National Institutes of Health. *Fertility and Sterility* will not consider for publication reports of unregistered trials which were begun after that date.